



## **WATER RESOURCES RESEARCH GRANT PROPOSAL**

**Project ID:** HI701

**Title:** Removal of nitrogenous aquaculture wastes by a wind-powered reverse osmosis system

**Focus Categories:** Nitrate Contamination, Waste Water

**Keywords:** Nitrogen, aquaculture waste, membrane, reverse osmosis, water reuse

**Start Date:** 03/01/2001

**End Date:** 02/28/2003

**Federal Funds:** \$18,749

**Non-Federal Matching Funds:** \$38,539

**Congressional District:** First

**Principal Investigator:**

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**Abstract**

Tilapia is a major source of protein around the world, and tilapia farming is the fastest growing segment of aquaculture in the United States. Over the last year, domestic tilapia production reached 15-20 million pounds. Rapid accumulation of nitrogenous wastes is one of the major operational problems of aquaculture operation of fresh water tilapia. As a result, water in a fishpond must be replaced regularly to maintain its water quality. In the mean time, wastewater from the fishpond must be treated to meet the stringent effluent water quality standards. In this project, a water re-circulating system for tilapia aquaculture will be developed and tested, which will use a wind-powered reverse osmosis system to remove nitrogenous wastes produced in a fish tank and reuse the treated wastewater as a fresh water supply. It will lead to a cost-effective and environmental-friendly aquaculture operation